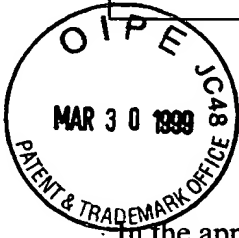


**CERTIFICATE OF MAILING BY "FIRST CLASS MAIL"**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:  
Assistant Commissioner for Patents, Washington, D.C. 20231, on 3/25, 1999.

*Shirley A. Holley*  
Shirley A. Holley



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the application of:

Irving BOIME et al.

Serial No.: 08/971,439

Filing Date: November 17, 1997

For: SINGLE-CHAIN BIFUNCTIONAL  
GLYCOPROTEIN HORMONES

Examiner: L. Spector, Ph.D.

Group Art Unit: 1646

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MATRIX CUSTOMER  
SERVICE CENTER

**PETITION TO CORRECT INVENTORSHIP  
PURSUANT TO 37 C.F.R. § 1.48(a)**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Petition is hereby made to correct the inventorship of the above-referenced patent to add the name of David Ben-Menahem as an inventor. As required by the above-cited rule, the following are also enclosed:

1. A statement by David Ben-Menahem that the inventorship error occurred without any deceptive intention on his part;
2. A statement from Irving Boime, the sole currently named inventor, stating that he has no disagreement in regard to the requested change;
3. A Substitute Declaration for Utility Patent Application executed by all inventors;
4. A copy of an Assignment (joint) to Washington University;

5. A Consent of Assignee, Washington University, agreeing to the change of inventorship;

6. A Certificate Under 37 CFR 3.73(b);

7. A check for the required fee (\$130.00);

In light of the foregoing, correction of the inventorship in the present application is respectfully requested.

Respectfully submitted,

Dated: 3/24, 1999

By: Kate H. Murashige  
Kate H. Murashige  
Registration No. 29,959

Morrison & Foerster LLP  
2000 Pennsylvania Avenue, N.W.  
Washington, D.C. 20006-1888  
Telephone: (202) 887-1533  
Facsimile: (202) 887-0763

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Shirley A. Holley

*Shirley A. Holley*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

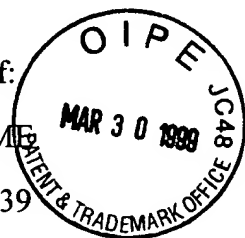
In the application of:

Irving BOIME

Serial No. 08/971,439

Filed: November 17, 1997

For: SINGLE-CHAIN BIFUNCTIONAL  
GLYCOPROTEIN HORMONES



Examiner: L. Spector, Ph.D.

Group Art Unit: 1646

STATEMENT OF DAVID BEN-MENAHEN

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

I, David Ben-Menahem, state as follows:

1. I am a coinventor, with Irving Boime, of the invention claimed in U.S. Patent Application Serial No. 08/971,439 filed November 17, 1997.

2. I was omitted as a named inventor in the application through an error in inventorship which occurred without any deceptive intent on my part.

Executed on 3/16/99 1999, at St. Louis, Missouri

*D Ben-Menahem*  
David Ben-Menahem

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Assistant Commissioner for Patents, Washington, D.C. 20231.

Date

3/25/99

Shirley A. Holley  
Shirley A. Holley

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Irving BOIME et al.

Serial No.: 08/971,439

Filing Date: November 17, 1997

For: SINGLE-CHAIN BIFUNCTIONAL  
GLYCOPROTEIN HORMONES



Examiner: L. Spector, Ph.D.

Group Art Unit: 1646

STATEMENT OF IRVING BOIME

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

I, Irving Boime, state as follows:

1. I am the solely named inventor on U.S. Patent Application Serial No. 08/971,439 filed November 17, 1997.

2. David Ben-Menahem was my coinventor with respect to this claimed subject matter.

3. I agree to the change of inventorship proposed in the enclosed Petition to add the name of David Ben-Menahem as an inventor.

Executed on 3-16 1999 at St. Louis, Missouri.

Irving Boime  
Irving Boime

**SUBSTITUTE DECLARATION FOR UTILITY PATENT APPLICATION**

AS A BELOW-NAMED INVENTOR, I HEREBY DECLARE THAT:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: SINGLE-CHAIN BIFUNCTIONAL GLYCOPROTEIN HORMONES, the specification of which is attached hereto unless the following box is checked:

☒ was filed on November 17, 1997 as United States Application Serial No. 08/971,439.

I HEREBY STATE THAT I HAVE REVIEWED AND UNDERSTAND THE CONTENTS OF THE ABOVE-IDENTIFIED SPECIFICATION, INCLUDING THE CLAIMS, AS AMENDED BY ANY AMENDMENT REFERRED TO ABOVE.

I acknowledge the duty to disclose information which is material to the patentability as defined in 37 C.F.R. § 1.56.

I hereby appoint the following attorneys and agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Thomas E. Ciotti (Reg No. 21,013)	Kate H. Murashige (Reg No. 29,959)
Gladys H. Monroy (Reg No. 32,430)	Debra A. Shetka (Reg No. 33,309)
Paul Schenck (Reg No. 27,253)	E. Thomas Wheelock (Reg No. 28,825)
Freddie K. Park (Reg No. 35,636)	Susan K. Lehnhardt (Reg No. 33,943)
Shmuel Livnat (Reg No. 33,949)	Tyler Dylan (Reg No. 37,612)
Antoinette F. Konski (Reg No. 34,202)	Harry J. Macey (Reg No. 32,818)
Stuart P. Kaler (Reg No. 35,913)	David L. Bradfute (Reg No. 39,117)
Robert Saltzberg (Reg No. 36,910)	Laurie A. Axford (Reg No. 35,053)
Mani Adeli (Reg No. 39,585)	Catherine M. Polizzi (Reg No. 40,130)
Sean Brennan (Reg No. 39,917)	J. Michael Schiff (Reg No. 40,253)
Robert K. Cerpa (Reg No. 39,933)	Ronald D. Devore (Reg No. 39,958)
Lee K. Tan (Reg No. 39,447)	Alan W. Cannon (Reg No. 34,977)
Madeline I. Johnston (Reg No. 36,174)	Dahna S. Pasternak (Reg No. 41,411)
Stephen C. Durant (Reg No. 31,506)	Frank Wu (Reg No. 41,386)
Hector Gallegos (Reg No. 40,614)	Barry E. Bretschneider (Reg No. 28,055)
Charles D. Holland (Reg No. 35,196)	Mark R. Carter (Reg No. 39,131)
Michael Hetherington (Reg No. 32,357)	Edward V. Donahue (Reg No. 35,492)
Thomas D. Mays (Reg No. 34,524)	Thomas G. Wiseman (Reg No. 35,046)
Wen Liu (Reg No. 32,822)	Ararat Kapouytian (Reg No. 40,044)

Please direct all communications to:

Kate H. Murashige  
Morrison & Foerster LLP  
2000 Pennsylvania Avenue, N.W.  
Washington, D.C. 20006-1888

Please direct all telephone calls to Kate H. Murashige at (202) 887-1533.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

3-16-99  
Date

Irying BOIME  
Name: Irying BOIME  
Residence: St. Louis, Missouri 63141  
Citizenship: United States  
Post Office Address: 27 Oak Park Drive, St. Louis, MO 63141

3/16/99  
Date

D. Ben - Menahe  
Name: David Ben MENAHEM  
Residence: St. Louis, Missouri 63146  
Citizenship: Israel  
Post Office Address: 12175-B Vivacite Walk, St. Louis, MO 63146

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Date

3/25/99

Shirley A. Holley

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Irving BOIME

Serial No. 08/971,439

Filed: November 17, 1997

For: SINGLE-CHAIN BIFUNCTIONAL  
GLYCOPROTEIN HORMONES

Examiner: L. Spector, Ph.D.

Group Art Unit: 1646

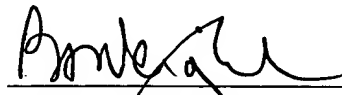
CONSENT OF ASSIGNEE

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Washington University is the Assignee of Irving Boime and of David Ben-Menahem with respect to the invention claimed in U.S. Patent Application Serial No. 08/971,439. The undersigned, who is authorized to execute this Consent on behalf of Washington University states that Washington University agrees to the change of inventorship to add the name of David Ben-Menahem requested in the accompanying Petition.

Executed on March 9<sup>th</sup> 1999 at St. Louis, Missouri.

  
P. Andrew Neighbour  
Vice Chancellor  
Washington University

**CERTIFICATE UNDER 37 C.F.R. § 3.73(b)**

Docket No. 295002005600

In the application of: Irving BOIME et al.  
 Serial No.: 08/971,439  
 Filed: November 17, 1997  
 For: SINGLE-CHAIN BIFUNCTIONAL GLYCOPROTEIN HORMONES

Washington University, a Missouri corporation, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel \*, Frame \*, or for which a copy thereof is attached.

OR

B. ☒ A chain of title from the inventor(s) of the patent application identified above, to the current assignee as shown below:

1. From : Irving Boime and David Ben-Menahem  
 To: Washington University  
 submitted for recordation in the Assignment records of the Patent and Trademark Office concurrently, a copy of which, as filed, is attached hereto.

2. From :  
 To:  
 The document was recorded in the Patent and Trademark Office at Reel , Frame ( pages); , or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

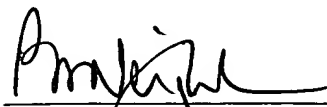
☒ Copies of assignments or other documents in the chain of title are attached.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned (whose title is supplied below) is empowered to sign this certificate on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

WASHINGTON UNIVERSITY

Dated: 3/9/99


Name: P. Andrew Neighbour  
 Title: Vice Chancellor



**COPY**

**ASSIGNMENT  
JOINT**

THIS ASSIGNMENT, by Irving BOIME (a U.S. citizen) and David BEN-MENAHM (an Israeli citizen) (hereinafter referred to as the assignors), residing at 27 Oak Park Drive, St. Louis, Missouri 63141 and 12175-B Vivacite Walk, St. Louis, Missouri 63146, respectively, witnesseth:

WHEREAS, said assignors have invented certain new and useful improvements in SINGLE-CHAIN BIFUNCTIONAL GLYCOPROTEIN HORMONES, set forth in an application for Letters Patent of the United States, having an oath or declaration executed on even date herewith; bearing Serial No. 08/971,439 and filed on November 17, 1997; and

WHEREAS, Washington University, a corporation duly organized under and pursuant to the laws of Missouri and having its principal place of business at 724 Euclid Avenue, St. Louis, Missouri 63110 (hereinafter referred to as the assignee) is desirous of acquiring the entire right, title and interest in and to said inventions and said application for Letters Patent of the United States, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon:


NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, said assignors have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto said assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions, application for Letters Patent, and any and all Letters Patent or Patents in the United States of America and all foreign countries which may be granted therefor and thereon, and in and to any and all divisions, continuations and continuations-in-part of said application, or reissues or extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by said assignee, for its own use and the use of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted, as fully and entirely as the same would have been held and enjoyed by the assignors, had this sale and assignment not been made.

AND for the same consideration, said assignors hereby covenant and agree to and with said assignee its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, said assignors are the sole and lawful owners of the entire right, title and interest in and to said inventions and the application for Letters Patent above-mentioned, and that the same are unencumbered and that said assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

AND for the same consideration, said assignors hereby covenant and agree to and with said assignee, its successors, legal representatives and assigns, that said assignors will, whenever counsel of said assignee, or the counsel of its successors, legal representatives and assigns, shall advise that any proceeding in connection with said inventions, or said application for Letters Patent, or any proceeding in connection with Letters Patent for said inventions in any country, including interference proceedings, is lawful and desirable, or that any division, continuation or continuation-in-part of any application for Letters Patent or any reissue or extension of any Letters Patent, to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of Letters Patent for said inventions, without charge to said assignee, its successors, legal representatives and assigns, but at the cost and expense of said assignee, its successors, legal representatives and assigns.

AND said assignors hereby request the Commissioner of Patents to issue said Letters Patent of the United States to said assignee as the assignee of said inventions and the Letters Patent to be issued thereon for the sole use of said assignee, its successors, legal representatives and assigns.

3-16-99   
Date Irving Boime

3/16/97   
Date David Ben-Menahem

**COPY**